Complete Summary

GUIDELINE TITLE

Engorgement.

BIBLIOGRAPHIC SOURCE(S)

Academy of Breastfeeding Medicine Protocol Committee, Berens P. ABM clinical protocol #20: engorgement. Breastfeed Med 2009 Jun;4(2):111-3. PubMed

GUIDELINE STATUS

This is the current release of the guideline.

Academy of Breastfeeding Medicine (ABM) protocols expire 5 years from the date of publication. Evidence-based revisions are made within 5 years or sooner if there are significant changes in the evidence.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

- Breast engorgement
- Infant nutritional status and health

Note: Breast engorgement is defined as "the swelling and distension of the breasts, usually in the early days of initiation of lactation, caused by vascular dilation as well as the arrival of the early milk."

GUIDELINE CATEGORY

Counseling
Diagnosis

Evaluation
Management
Prevention
Treatment

CLINICAL SPECIALTY

Family Practice
Nursing
Nutrition
Obstetrics and Gynecology

INTENDED USERS

Advanced Practice Nurses
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To evaluate the state of evidence on the prevention, recognition, and management of breast engorgement to encourage successful breastfeeding

TARGET POPULATION

Women in the immediate postpartum and their infants

INTERVENTIONS AND PRACTICES CONSIDERED

Assessment/Diagnosis

1. Inquire about breast fullness and engorgement
2. Differentiate engorgement from other causes of breast swelling
    - Mastitis
    - Gigantomastia

Prevention/Treatment

1. Medical therapies
2. Anti-inflammatory enzyme agents
3. Enzyme therapy
4. Breast massage (e.g., reverse pressure softening technique)
5. Herbal remedies
6. Manual expression or pumping
7. Patient anticipatory guidance and counseling, including contact information for after hospital discharge

MAJOR OUTCOMES CONSIDERED

- Incidence of breast engorgement

- Rates of breastfeeding initiation and duration
- Symptom relief

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

An initial search of relevant published articles written in English in the past 20 years in the fields of medicine, psychiatry, psychology, and basic biological science is undertaken for a particular topic. Once the articles are gathered, the papers are evaluated for scientific accuracy and significance.

NUMBER OF SOURCE DOCUMENTS

45

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Committee)
Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

I Evidence obtained from at least one properly randomized controlled trial

II-1 Evidence obtained from well-designed controlled trials without randomization

II-2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group

II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of the introduction of penicillin treatment in the 1940s) could also be regarded as this type of evidence.

III Opinions of respected authorities, based on clinical experience, descriptive studies and case reports; or reports of expert committees

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

An expert panel is identified and appointed to develop a draft protocol using evidence based methodology. An annotated bibliography (literature review), including salient gaps in the literature, are submitted by the expert panel to the Protocol Committee.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Draft protocol is peer reviewed by individuals outside of lead author/expert panel, including specific review for international applicability. Protocol Committee's sub-group of international experts recommends appropriate international reviewers. Chair (co-chairs) institutes and facilitates process. Reviews submitted to committee Chair (co-chairs).

Draft protocol is submitted to The Academy of Breastfeeding Medicine (ABM) Board for review and approval. Comments for revision will be accepted for three weeks following submission. Chair (co-chairs) and protocol author(s) amends protocol as needed.

Following all revisions, protocol has final review by original author(s) to make final suggestions and ascertain whether to maintain lead authorship.

Final protocol is submitted to the Board of Directors of ABM for approval.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Assessment of Engorgement

Tools

No standardized reliable tool for assessing breast engorgement has been established. Various methods of subjectively rating engorgement have been utilized, such as visual descriptions, cup size, hardness or firmness scales, but none has become clinically useful (Newton & Newton, 1951; Hill & Humenick, 1994; Humenick, Hill, & Anderson, 1994; Neifert et al., 1990).

Predictors

1. The relationship between parity and engorgement remains unclear because of little research. Onset of lactogenesis occurs sooner in multiparous compared to primiparous women, but engorgement has not been studied in this regard (Dewey et al., 2003).
2. Women undergoing cesarean delivery typically experienced peak engorgement 24-48 hours later than those who delivered vaginally (Moon & Humenick, 1989). These women also initiated breastfeeding significantly later than did their vaginally delivered counterparts. This finding appears consistent with other research that has found that cesarean delivery may correlate with a higher likelihood of delayed onset of lactation (Dewey et al., 2003).
3. It is not uncommon for women who have undergone breast surgery to experience engorgement (Brzozowski et al., 2000).
4. The influence of length of labor, premature delivery, anesthetic options, and intravenous fluids remain unclear (Lurie et al., 2002; Shalev et al 1984; Hardwick-Smith, Mastrobattista, & Nader, 1998).

Differentiating Engorgement from Other Causes of Breast Swelling

1. *Mastitis*. Engorgement may be associated with a slight elevation of maternal temperature, but significant fever, especially when associated with breast erythema and systemic symptoms such as myalgias, suggests the diagnosis of mastitis. Typically mastitis affects only one breast with a segmental pattern of redness. Engorgement is usually diffuse, bilateral, and not associated with breast erythema (Lawrence & Lawrence, 2005).
2. *Gigantomastia*. Gigantomastia is a diffuse, bilateral process that occurs very rarely and does not typically present in the postpartum period. The reported incidence is approximately 1:100,000, but some feel that it is more common with a rate as high as 1:8,000 (Antevski et al., 2007). It is regarded as bilateral benign but progressive massive breast enlargement to an extent that tissue necrosis may occur and infection and sepsis may result. Histologic findings suggest marked lobular hypertrophy and ductal proliferation. No clear etiology for this condition has been elicited, although hormonal changes are likely involved (Antevski et al., 2007; Swelstad et al., 2006; Vidaeff et al., 2003; Beischer, Hueston, & Pepperell, 1989).

Prevention and Treatment

Prevention

There has been a great deal of research into medical therapies to suppress lactation, but limited research into prevention and treatment strategies for lactating women who may develop engorgement. Focused education to mothers regarding breastfeeding position and attachment or prenatal nipple conditioning has shown no difference in subsequent incidence of engorgement (de Oliveira et al., 2006; Storr, 1988). However, some breastfeeding techniques have been specifically associated with less engorgement, including emptying one breast at each feeding and alternating which breast is offered first (Evans, Evans, & Simmer, 1995). Limited evidence suggests breast massage after feeds performed for the first 4 days postpartum may reduce the extent of engorgement (Storr, 1988). Although commonly accepted as preventive of engorgement, frequent effective feeding patterns have not been studied (Evans, Evans, & Simmer, 1995).

Treatment

Adequate management of engorgement is important for successful long-term lactation (Stamp & Casanova, 2006; Cooke, Sheehan, & Schmeid, 2003). Although experiencing engorgement may be temporarily uncomfortable for mothers, it appears to be associated with a decrease in the likelihood of early weaning. At the same time, failure to effectively resolve prolonged symptomatic engorgement may additionally have a negative impact on continued adequate milk supply.

Both pharmacologic and non-pharmacologic therapies have been touted as beneficial for the treatment of engorgement. A systematic review of both randomized and "quasirandomized" controlled studies assessing effectiveness of treatments for breast engorgement was done by Snowden et al. in 2001. This analysis identified eight trials including 424 women. Therapies reviewed that outperformed placebos in decreasing symptoms are described below:

1. Serrapeptase® (Takeda Chemical Industries, Ltd., Osaka, Japan) (Danzen), an anti-inflammatory enzyme agent, 10 mg three times daily, was compared to placebo three times daily for 3 days. (Kee et al., 1989) The Danzen group reported marked improvement in 23% of women compared to only 3% in the placebo group. Overall 86% of the treatment group reported statistically significant marked or moderate improvement compared to 60% for the placebo group. Although the results suggest that the anti-inflammatory agent may be beneficial, the study has the significant limitation that few women in the study were breastfeeding their infant.
2. Enzyme therapy using a protease complex enteric-coated tablet containing 20,000 units of bromelain and 2,500 units of crystalline trypsin, another anti-inflammatory agent, has been tested (Murata, Hanzawa, & Nomura, 1965). Women with breast swelling or induration on days 3-5 and pain were given either the protease complex or placebo tablets (approximately 5 tablets per day) for 3 days for a total of 16 tablets. The protease complex was found to be effective in 83% of cases compared to 33% of those receiving placebo.
3. Reverse pressure softening technique uses gentle positive pressure to soften an area (1-2 inches or so) near the areola surrounding the base of the nipple.

The goal is to temporarily move some swelling slightly backward and upward into the breast. Moving the edema away from the areola has been shown to improve the latch of the infant during engorgement (Cotterman, 2004). The physiologic basis for this technique is the presence of increased resistance in the subareolar tissues during engorgement.

4. Snowden et al. concluded that there is no benefit for the following treatments as compared with placebo: cabbage leaves, cabbage leaf extract, oxytocin, cold packs, and ultrasound.

It may be that some treatments help the discomfort without relieving the actual engorgement.

It should also be noted that many of the therapies listed above may not be available in certain countries.

Other Considerations

1. *Herbal remedies*. At the present time herbal remedies for breast engorgement and oversupply have been described, but scientific investigation regarding their effectiveness is not available.
2. *Manual expression or pumping*. If the infant cannot successfully nurse, measures should be undertaken to assist the mother with manual expression or pumping, either for a few minutes to allow softening and compressibility of the nipple-areolar complex or for milk extraction. The milk can then be given to the infant by cup, and the mother can be encouraged to nurse more frequently prior to the recurrence of severe breast engorgement. All new mothers should also be instructed in the technique of manual breast expression. ("Hand expression of breastmilk"; see video at http://newborns.stanford.edu/Breastfeeding/HandExpression.html)
3. Anticipatory guidance regarding the occurrence of breast engorgement should be given to all breastfeeding mothers prior to hospital discharge. In many countries where women may have longer hospital stays engorgement may occur in the birth hospital. However, many women are discharged before the expected time of peak symptomatic engorgement. Mothers should be counseled about symptomatic treatment options for pain control. Acetaminophen (or paracetamol) and ibuprofen are both safe options for nursing mothers to take in appropriate doses. Additionally, contact information for breastfeeding supportive advice should be provided. Healthcare personnel seeing either the newborn or mother after discharge should routinely inquire about breast fullness and engorgement.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate prevention, recognition, and management of breast engorgement to encourage successful breastfeeding

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- Although the results suggest that an anti-inflammatory agent may be beneficial to the treatment of engorgement, the Danzen study has the significant limitation that few women in the study were breastfeeding their infant.
- A central goal of The Academy of Breastfeeding Medicine is the development of clinical protocols for managing common medical problems that may impact breastfeeding success. These protocols serve only as guidelines for the care of breastfeeding mothers and infants and do not delineate an exclusive course of treatment or serve as standards of medical care. Variations in treatment may be appropriate according to the needs of an individual patient.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2009 Jun

GUIDELINE DEVELOPER(S)

Academy of Breastfeeding Medicine - Professional Association

SOURCE(S) OF FUNDING

Not stated

GUIDELINE COMMITTEE

Academy of Breastfeeding Medicine Protocol Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Lead Author: Pam Berens, M.D., FABM

Protocol Committee: Maya Bunik, M.D., FABM; Caroline J. Chantry, M.D., FABM (Co-Chairperson); Cynthia R. Howard, M.D., MPH, FABM (Co-Chairperson); Ruth A. Lawrence, M.D., FABM; Kathleen A. Marinelli, M.D., FABM (Co-Chairperson); Larry Noble, M.D., Translations Chair; Nancy G. Powers, M.D., FABM

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

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GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the Academy of Breastfeeding Medicine Web site.

Print copies: Available from the Academy of Breastfeeding Medicine, 140 Huguenot Street, 3rd floor, New Rochelle, New York 10801.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Procedure for protocol development and approval. Academy of Breastfeeding Medicine. 2007 Mar. 2 p.

Print copies: Available from the Academy of Breastfeeding Medicine, 140 Huguenot Street, 3rd floor, New Rochelle, New York 10801.

PATIENT RESOURCES

None provided

NGC STATUS

This NGC summary was completed by ECRI Institute on March 11, 2010. The information was verified by the guideline developer on April 21, 2010.

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